Small Packaged Products
Gas Heating/Electric Cooling Units
Natural-To-Propane Gas
Conversion Kit

Cancels: IIK 588A-18-7 IIK 588A-18-10
11/1/97

Installation Instructions

Part No. CPLPCONV004A00

NOTE: Read all installation instructions before beginning installation.

GENERAL

These instructions cover the installation of a propane conversion kit on the 48HX030-060, 48SS018-060, 48SX024-060, 588A018-060, 589A024-060, and 658A030-060 gas heating/electric cooling units that are equipped with a White Rogers combination automatic gas valve/regulator.

⚠ WARNING

This conversion kit is to be installed by qualified service personnel in accordance with these instructions and all codes and requirements of the authority having jurisdiction, and in Canada, in accordance with the requirements of the CAN/CGA (Canadian Gas Association) B149.1 and B149.2 Installation Code. Failure to follow these instructions could result in serious injury or property damage. The qualified agency performing this work assumes responsibility for this conversion.

INSTALLATION

⚠ WARNING

Turn off the gas supply, then the electrical power to the unit before starting the installation. Tag the disconnect switch with a suitable warning label. Electrical shock can cause personal injury or death.

⚠ WARNING

This unit is designed to operate at 3.5 in. wg (±.2 in. wg) of manifold pressure with liquid propane (LP) gas. Exceeding this pressure will cause explosion or injury.

Step 1 — Installing Mechanical Components —

Proceed as follows to install the mechanical components contained in this kit (see Fig. 1 and Table 1) on units:

1. Remove burner access panel.
2. Disconnect gas pipe from gas valve.
3. Disconnect orange sparker cable at ignition control.
4. Disconnect yellow flame sensor wire from ignition control.
5. Disconnect gray and brown wires from gas valve, and remove rollout switch. Save rollout switch and screw.

Table 1 — LP Conversion Kit Contents

QUANTITY	CONVERSION KIT ITEM	ITEM KIT PART NO.
3	Burner Orifice No. 40	LH32RF098
3	Burner Orifice No. 41	LH32RF096
3	Burner Orifice No. 42	LH32RF094
3	Burner Orifice No. 43	LH32RF089
3	Burner Orifice No. 44	LH32RF086
3	Burner Orifice No. 45	LH32RF082
3	Burner Orifice No. 47	LH32RF079
3	Burner Orifice No. 49	LH32RF073
1	Burner Bracket (1 Burner)	48SS500392
1	Burner Bracket (2 Burner)	48SS500393
1	Burner Bracket (3 Burner)	48SS500394
1	Conversion Label	48SS500401
1	Conversion Responsibility Label	48SS500283
1	Warning Label	50DK502297
1	Limit Switch	HH18HA119
1	Limit Switch	HH18HA454
1	Limit Switch	HH18HA435
1	Limit Switch	HH18HA430
1	Limit Switch	HH18HA440
1	Flue Baffle	48SS500608
1	Flue Baffle	48SS500610

NOTE: Follow these installation instructions carefully, and only use the parts necessary for your application.

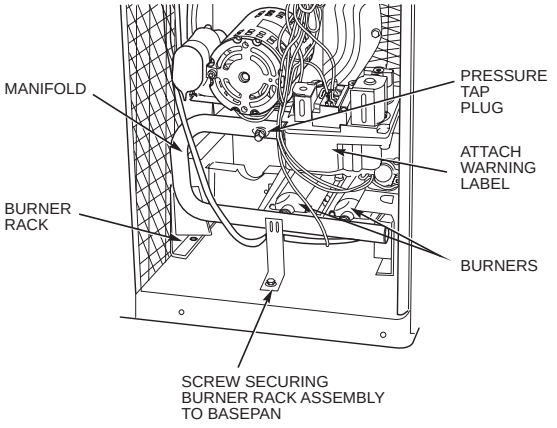

Fig. 1 — Gas Section of Unit

6. Remove screw attaching burner rack assembly to basepan and slide out burner rack assembly from unit. See Fig. 1. Save screw.
7. Using a 5⁄16-in. nut driver, remove the screws holding each burner on rack. Remove burners from rack. Save screws. See Fig. 2.
8. Remove screws fastening the burner rack to the burner bracket, and the burner bracket to the gas manifold (8 screws total). Save screws.
9. Remove rack and burner bracket from unit. Replace the burner bracket from the unit with the burner bracket from the kit. There are 3 burner brackets included in the kit; select the correct burner bracket based on the number of burners.
10. Reattach burner rack to the burner bracket, and the burner bracket to the gas manifold with the 8 screws saved in Step 8.

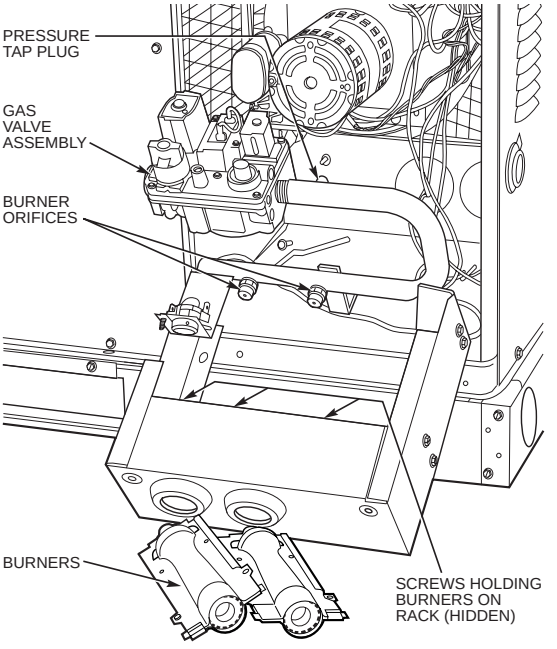

Fig. 2 — Burner Rack Assembly (54,000 and 80,000 Btuh Units Shown)

11. Remove natural gas burner orifice(s) from manifold and replace with LP gas orifice(s) from kit. See Fig. 2. Refer to Tables 2 and 3 for the correct orifice sizes based on input and altitude.
12. Replace burners in rack using screws saved from Step 7.
13. Attach warning label from LP conversion kit to visible side of gas valve as shown on Fig. 1.
14. Attach conversion label (Fig. 3) from LP conversion kit above unit rating plate on exterior of unit.

Table 2 — Rated Gas Inputs at Indicated Manifold Pressures

UNIT SIZES	LP NOMINAL HEATING INPUT (Btuh)*	NUMBER OF ORIFICES	GAS SUPPLY PRESSURE (in. wg) (LP)		MANIFOLD PRESSURE (in. wg) (LP)	LP GAS ORIFICE PART NO.	
			Min	Max		0-2000 Ft	2000-5000 Ft
018040 024040 030040	40,000	1	4.0	13.0	3.1	LH32RF096 No. 41	LH32RF089 No. 43
024060 030060 036060 042060	54,000	2	4.0	13.0	3.3	LH32RF079 No. 47	LH32RF073 No. 49
030080 036080 036100 042080 042100 048080 048100 060080 060100	80,000	2	4.0	13.0	3.4	LH32RF094 No. 42	LH32RF089 No. 43
036100† 042100† 048100† 060100†	96,000	3	4.0	13.0	3.4	LH32RF086 No. 44	LH32RF082 No. 45
036120 042120 048120 060120	115,000	3	4.0	13.0	3.5	LH32RF094 No. 42	LH32RF089 No. 43
048140 060140	133,000	3	4.0	13.0	3.4	LH32RF098 No. 40	LH32RF096 No. 41

LEGEND

LP — Liquid Propane

*At 0 to 2000 ft.

†Three-burner units with LP Nominal Heating Input of 96,000 Btuh will become available in early 1998.

NOTE: Unit size 018 is for units 48SS and 588A only; unit size 024 not applicable to units 48HX and 658A.

15. Attach completed conversion responsibility label (Fig. 4) from LP conversion kit inside burner access panel.
16. Install burner assembly by sliding burner back into unit. Two alignment pins are attached to vestibule plate to ensure proper alignment. Secure burner assembly using screw removed during disassembly (Step 6).
17. Reconnect gray and brown wires to gas valve, and reinstall rollout switch with screw saved from Step 5.
18. Reconnect yellow flame sensor wire to ignition control.
19. Reconnect orange sparker cable at ignition control.

CONVERSION KIT RATING PLATE

THIS APPLIANCE HAS BEEN CONVERTED TO USE LP. GAS FOR FUEL.
: REFER TO INSTRUCTIONS FOR CONVERSION PROCEDURES.
: USE PARTS SUPPLIED, AND INSTALLED BY QUALIFIED PERSONNEL.
: SEE EXISTING RATING PLATE FOR APPLIANCE MODEL NO.
: GAS SUPPLY PRESSURE 13.0 IN. WC. [3.2 kPa] MAX.
4.0 IN. WC. [.99 kPa] MIN.

ALTITUDE 0 — 2000 FEET

	GAS ORIFICE		MANIFOLD GAS PRESSURE	INPUT MAX.		OUTPUT CAP.		THERMAL EFF. %
BTU'S	NO.	SIZE IN.		Btu/HR	kW	Btu/HR	kW	
40,000	41	.0960	3.1	40,000	11.7	33,600	9.8	84
60,000	47	.0785	3.3	54,000	15.8	45,900	13.4	85
80,000	42	.0935	3.4	80,000	23.4	67,200	19.7	84
100,000	44	.0860	3.4	96,000	28.1	77,760	22.8	81
120,000	42	.0935	3.5	115,000	33.7	95,450	27.9	83
140,000	40	.0980	3.4	133,000	38.9	110,390	32.3	83

ALTITUDE 2000 — 4500 FEET

	GAS ORIFICE		MANIFOLD GAS PRESSURE	INPUT MAX		OUTPUT CAP.		THERMAL EFF. %
BTU'S	NO.	SIZE IN.		Btu/HR	kW	Btu/HR	kW	
40,000	43	.0890	3.1	36,000	10.5	30,240	8.9	84
60,000	49	.0730	3.3	48,600	14.2	41,310	12.1	85
80,000	43	.0890	3.4	72,000	21.1	60,480	17.7	84
100,000	45	.0820	3.4	86,400	25.3	69,980	19.0	81
120,000	43	.0890	3.5	103,500	30.3	85,900	25.2	83
140,000	41	.0960	3.4	119,700	35.1	99,350	29.1	83

48SS500401 REV D

Fig. 3 — Conversion Label

Step 2 — Remove or Replace Flue Baffle —

The flue baffle can be viewed by looking down the outlet of the flue discharge. Proceed as follows to remove and replace the flue baffle shipped with the unit:

1. Remove the 5 screws securing the induced draft housing to the unit vestibule plate. Save screws.
2. Remove the induced draft housing from the unit and place it on top of the unit. Wires should not have to be disconnected, but may be disconnected if necessary.
3. Remove the 2 screws securing the baffle in place. Discard baffle. For 80,000; 100,000; and 120,000 Btuh heating units, install replacement flue baffle as noted in Table 4. **If no baffle is required (see Table 4) reinstall the 2 screws only.**
4. Reinstall the induced draft housing and secure with the 5 screws removed from Step 1. Reconnect any wires that were disconnected for this installation.

THIS APPLIANCE HAS BEEN CONVERTED
TO LP GAS KIT NO. _____

BY _____ DATE: _____

WHO ACCEPTS THE RESPONSIBILITY FOR
THE CORRECTNESS OF THIS CONVERSION.

48SS500283

Fig. 4 — Conversion Responsibility Label

Table 3 — Altitude Compensation Above 5000 Ft

FT	LIQUID PROPANE ORIFICE Btuh Input			
	40,000; 80,000; 115,000	54,000	96,000	133,000
6,000	44	49	47	43
7,000	44	50*	47	43
8,000	45	50*	48*	44
9,000	46*	51*	48*	44
10,000	49	51*	49	45

*Field Supplied.

Table 4 — Baffle Application

UNIT NOMINAL SIZE	NUMBER OF BURNERS	FLUE BAFFLE
40	1	No Baffle
60	2	No Baffle
80	2	48SS500608
100	2	48SS500608
100	3	48SS500610
120	3	48SS500610
140	3	No Baffle

Step 3 — Install Limit Switch (If Necessary) —

On some units, the limit switch must be replaced. See Table 5 for limit switch information. To replace the limit switch:

1. Remove the blower access panel.
2. Locate and disconnect 2 violet wires from the limit switch.
3. Verify that the limit switch matches the one listed in Table 5. If not, remove the limit switch and replace it with the limit switch provided in the kit.
4. Reconnect the violet wires to the limit switch.
5. Reinstall the blower access panel.

Step 4 — Heating Start-Up and Adjustment

1. Reconnect gas pipe to gas valve.
2. Turn on unit electric power, then gas supply.

⚠ WARNING

Do not purge gas supply into the combustion chamber. Do not use a match or other open flame to check for gas leaks. Use a soap-and-water solution and leak check all gas piping. A failure to observe these warnings could result in an explosion, causing personal injury or death.

Make certain that the gas supply pipe has been purged and all gas piping leak checked before starting the unit.

The burner orifices are sized for the correct gas input when the heating value of the propane gas is 2500 Btu/cu ft with a specific gravity of 1.5 at the manifold pressure listed in Table 2. (Gas supply pressure minimum is 4.0 in. wg; maximum is 13.0 in. wg.)

Table 5 — Limit Switch Application

UNIT	SIZE	LIMIT SWITCH
48HX; 658A	030040	HH18HA440
	030060	HH18HA430
	036060	HH18HA430
	036080	HH18HA435
	048080	HH18HA430
	048100*	HH18HA435
	048100†	HH18HA119
	060080	HH18HA430
	060100*	HH18HA435
	060100†	HH18HA119
48SS; 588A	018040	HH18HA440
	024040	HH18HA440
	024060	HH18HA430
	030040	HH18HA440
	030060	HH18HA430
	030080	HH18HA440
	036060	HH18HA430
	036080	HH18HA440
	036100*	HH18HA454
	036100†	HH18HA119
	036120	HH18HA440
	042060	HH18HA430
	042080	HH18HA435
	042100*	HH18HA440
	042100†	HH18HA119
	042120	HH18HA435
	048080	HH18HA440
	048100*	HH18HA435
	048100†	HH18HA119
	048120	HH18HA430
	048140	HH18HA435
	060080	HH18HA430
	060100*	HH18HA435
	060100†	HH18HA119
	060120	HH18HA430
	060140	HH18HA430
48SX; 589A	024040	HH18HA440
	024060	HH18HA430
	030040	HH18HA440
	030060	HH18HA430
	030080	HH18HA435
	036060	HH18HA430
	036080	HH18HA435
	036100*	HH18HA440
	036100†	HH18HA119
	036120	HH18HA440
	042060	HH18HA430
	042080	HH18HA440
	042100*	HH18HA435
	042100†	HH18HA119
	042120	HH18HA430
	048080	HH18HA430
	048100*	HH18HA435
	048100†	HH18HA119
	048120	HH18HA430
	048140	HH18HA430
	060080	HH18HA430
	060100*	HH18HA435
	060100†	HH18HA119
	060120	HH18HA430
	060140	HH18HA430

*2 Burner Unit.
†3 Burner Unit.

Use a water or u-tube manometer to measure the manifold pressure. If a spring manometer is used, make sure the manometer is calibrated. Refer to Table 2 for rated gas inputs, supply pressure, and manifold pressure.

Proceed as follows to measure and set the manifold pressure (refer to Fig. 1):

1. Turn off gas supply first and then electrical power to unit.
2. Remove pressure tap plug (Fig. 2) on gas manifold and connect manometer at this point.
3. Turn on electrical power, then gas to unit. With unit operating and all burners fired, adjust regulator adjustment screw on gas valve for manifold pressure listed in Table 2. Turn screw in (clockwise) to increase pressure or out (counterclockwise) to decrease pressure.
4. Turn off gas then electrical power to unit. Remove manometer and replace plug in pressure tap.
5. Turn on gas supply and electrical power to unit.
6. Inspect for leaks.
7. Check temperature rise for the midpoint of the range as listed on unit nameplate.

⚠ WARNING

Never use a match or other open flame to check for leaks. Fire or serious injury could result. Use a soap-and-water solution.

CHECKOUT PROCEDURE — Refer to unit Installation Instructions for complete sequence of operation.

Burners are not adjustable. Ensure that the flames on each burner are light blue with yellow tips and ‘‘soft’’ in appearance, and the flames are approximately the same for each burner.

Before leaving the installation, observe a complete operating cycle to see that all components are functioning properly.

Replace burner access panel.

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